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THE ABRAMS TREATMENT

AN INVESTIGATION

By
G. LAUGHTON SCOTT

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"THE ABRAMS TREATMENT" IN PRACTICE

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"THE ABRAMS TREATMENT" IN PRACTICE

An Investigation

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I.—INTRODUCTION

"THE ABRAMS TREATMENT" IN PRACTICE

I.—INTRODUCTION

For anyone who approaches the problem of Abrams with an unbiased mind, desiring to collect other than hearsay evidence, the first question is one of disentanglement. There is so much in the doctrine of Abrams that never possibly could be true, such exuberance of speculation, that the investigator is continually tempted to throw up the whole subject in despair, not pausing to consider whether underneath pseudo-scientific jerry-building there may be a foundation of truth.

More than a year ago, the writer was impelled towards an inquiry into the matter by accidentally meeting in practice two cases of severe illness in which

he was puzzled to explain obvious and striking improvement. He resolved to approach certain medical men in England who practise the method, in order to find for himself whether any curative force other than suggestion was at work. But the investigation proved neither so short nor so easy as was anticipated, and the space of a year has not been found too long for collecting reliable evidence, the bulk of which has been gathered from the work of others; the writer's personal contribution being limited to a few cases in which he has applied the treatment experimentally.

It is not proposed to discuss in this small work, or even to describe, what Abrams and his followers believed; but to confine attention to two questions only: (1) whether the instrument of treatment, the oscilloclast, produces clinical results which cannot be denied, and (2) whether that instrument gives rise to demonstrable electrical phenomena which might explain any positive results. The arrangement of this book falls

naturally, therefore, into two divisions, clinical and electrical, in which these questions are considered separately.

It may be thought that to put aside the diagnostic method of Abrams, is to evade an essential issue at the outset. It has, indeed, always been assumed that the theory and practice of Abrams must stand or fall together; and that if the diagnostic reactions are fallacious or non-existent, any treatment which is based upon them must depend for success on the psychological factor alone. Certainly Abrams' own insistence on their infallibility has contributed to the prevalence of this view. But it is surely admissible to approach the subject from quite a different angle, entertaining no question of theory till the end-results of treatment are proved or disproved. If these are disproved, the problem of Abrams is of little further concern to practical people.

But if, on the other hand, after thorough and impartial examination, the results of treatment are found to be

genuine, the theoretical side of Abrams' work is still not therefore vindicated. It would still be debatable whether the assumptions and unchecked speculations which we associate with his name form an adequate explanation of observed phenomena; or whether some simpler principle must be looked for, the nature, limitations and possibilities of which need to be re-discovered.

The chief difficulty in establishing objectivity of results is to exclude the influence of "suggestion," so far as that most elusive factor can be excluded. Every new treatment produces results while it is new, and it is instructive to notice how frequently, in the past, treatments introduced by the most impeccable authorities have gradually ceased to be effective as their freshness became impaired.

In the last resort the exclusion of suggestion depends upon accurate clinical observation over a wide field. Pains have therefore been taken to collect a considerable number of instances in

which diagnosis was well-substantiated, and in which the result could be estimated with accuracy. Their recital must prove dull reading, but this is inevitable if any reliable conclusion is to be reached. Not many sources of material have been drawn upon, but the enquiry has been narrowed down to several different types of case obtained from the practices of only three medical men, and to the writer's own experimental cases. For reasons of space, all cannot be quoted *in extenso*, but care has been taken to secure the authenticity of the instances brought forward; and full details will be submitted for the private perusal of any medical man who is sufficiently interested to make enquiries.

Some of the cases had been treated without their eventual publication being contemplated, and to show the strictest documentary evidence of every clinical detail in each of them would have been a work of gigantic and unnecessary labour. With the writer's own experimental cases, however, accuracy and detail even

in non-essentials has been punctiliously adhered to. Examinations were made at the commencement, during the course, and at the end of treatment by an independent physician not conversant with Abrams' doctrines.

II.—TUBERCULOSIS

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1.—Tuberculosis of Knee-Joint :

MALE—*æt.* 24.—Tubercular arthritis of the right knee, with history of tubercular peritonitis. The trouble began in 1916 whilst on war-service. Early in 1922 excision of the knee-joint was recommended by a consulting surgeon. When seen on 20-5-1922, the knee was painful, swollen, felt thick and pulpy, and there was a sinus with profuse discharge : the patient wore a Thomas's splint.

His doctor asked for the knee to be treated by Abrams' method, in the hope of avoiding operation. At the end of a month's treatment the swelling was considerably reduced, the discharge thin and serous, and there was no pain; although the patient had two hours' journey each day by train and 'bus to come for treatment.

At the end of July, the sinus was soundly healed, and the swelling so much reduced that the bony prominences of the knee could be outlined: there was no pain; the patient declared he was no longer conscious of his knee, and there was slight voluntary flexion of the joint. He was dismissed from treatment, and when next seen, in September, had gained a stone in weight, and was anxious to discard the splint. In February, 1924, he wrote that he had not worn the splint for more than a year, was in sound health, and rode a motor-cycle. In July, 1924, he was thrown from his motor-cycle on to the knee, which was found to be somewhat swollen: but this passed off in a few days. His doctor has expressed satisfaction at the result in this case.

14-10-24—satisfactory report.

2.—Tuberculosis of Spine:

MARRIED WOMAN—*æt.* 42.—In 1913 pulmonary tuberculosis; lesion at right

apex: tubercle bacilli present. Infection did not progress, but it was found necessary for her to winter in the South of England every year.

At end of 1920 was treated for "rheumatism in the neck." Obtaining no relief, she went to Guy's Hospital and was seen by several clinicians, who diagnosed tuberculosis of the vertebrae, which was confirmed by radiographs. She was kept in bed for five months, and when discharged was put into a steel and plaster jacket, which immobilised head, neck and the rest of the spine; she was warned that great care was necessary, and she was not to discard the jacket during the day. She made no progress, and had to return to bed for four months. After this she again got about a little, though very unwell.

In December, 1922, she came for Abrams treatment. At this time had been running an evening temperature of 100°—101° for several months: weight seven stone: irritating cough: pain so great, when she discarded the

jacket each evening, that sleep was very poor : intense local pain and considerable swelling. X-ray showed impaired definition of 7th cervical and 4th dorsal vertebrae. Within the first week the temperature had become normal, and so remained. At the end of three weeks, pain was absent, swelling reduced, weight increased, sleep good. The jacket was then discarded, and she was discharged at the end of nine weeks, and shortly obtained a situation involving a great deal of lifting and manual labour.

10-10-24—Appears to be in robust health, still working hard for her living : weight 9st. 4lbs. ; spine mobile, no unfavourable symptom since discharge.

3.—Tuberculosis of Glands :

SINGLE WOMAN—*æt.* 24.—Tubercular glands. First examined, November, 1922 : general condition good, except that she was very easily tired. There was a large mass of tubercular glands at the right side of the neck, but no other

indications of infection were found. She had undergone a course of graduated tuberculin injections, among other measures.

In the hope of avoiding operation, treatment by the Abrams method was suggested 10-11-22. Response was immediate. At the end of a few weeks there was definite diminution in the mass of the glands: at the end of eight weeks she was able to play games and attend dances without undue fatigue; and the casual observer would have been unable to detect the slight swelling which remained in the neck. When last seen, at the beginning of 1924, the patient had remained well and the swelling was still not apparent.

4.—Pulmonary Tuberculosis:

MALE—*æt.* 34.—In December, 1921, had a morning cough with sputum; tuberculosis was suspected, but no physical signs were discovered.

In June 1922, he coughed up sputum

streaked with blood, and again consulted his doctor, who found crepitations at the apex; sputum examination positive. A well-known consultant then sent him to a sanatorium. X-rays confirmed a lesion at the left apex; temperature 99° to 100°; he lost 5 lbs. weight in four weeks. After ten weeks at the sanatorium artificial pneumothorax was contemplated, but further X-ray examination indicated a second lesion, in the right lung: sputum still positive; the temperature had not become normal. By November he was well enough to take a little exercise, the sputum remaining positive. In April, 1923, he was advised to live permanently by the sea and made definite improvement, gaining 8 lbs. in weight, but in the autumn the sputum was still positive.

In the beginning of January, 1924, there was a return of symptoms, and he came for treatment by Abrams' method. On examination, diminished expansion of left apex with fine crepitations at end of inspiration, dullness on percussion,

and increased vocal resonance; temperature 99° to 100°. After a month's treatment, temperature was normal, crepitations had disappeared, appetite had returned, and Clinical Research Laboratory reported on his sputum:—"The sputum is largely mucoid in character: specially prepared films failed to demonstrate tubercular bacilli."

He returned to work. Two subsequent examinations of sputum were negative, and the patient, seen in August, 1924, reported better health than he had had for years. His own doctor was satisfied that the disease was arrested.

Satisfactory report 14-10-24.

MALE—*æt.* 53.—About twenty years previously, whilst in India, had developed tuberculosis and was discharged from the army. Went to Davos for treatment, and made a partial recovery. Since that time he had had a cough, with occasional blood-stained sputum. Had been losing ground the last two years. On examination, 30-5-1924, positive signs at

both apices: complained of weakness, loss of appetite, and persistent cough with sputum. After nine weeks' treatment he had made good progress, the cough was much less troublesome, and he had very little sputum; his breathing had improved. Two months later he wrote to say that he was still very well.

III.—SOME CHRONIC LOCAL INFECTIONS

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A.—Chronic Colitis :

1. MALE—*æt.* 63.—Healthy till October, 1922, except for a mild chronic colitis which had existed for fifteen years. The effects of this had never been serious, but he had always diarrhœa alternating with constipation ; and had, during the whole of this time, used an ointment to counteract the irritating effect of a discharge from the rectum. Mucus was always observed in the stools. Late in 1922 he developed acute cystitis, which was treated by rest in bed. The acute symptoms subsided, but a chronic condition supervened in which urinary antiseptics, etc., were of no avail. He consulted a well-known genito-urinary expert, who found the causative agent to be coli bacillus. Exhaustive examinations were made of the urinary tract, and

a vaccine was prepared. No benefit ensued, but prostatic massage was given, with a little improvement. His work was then abandoned for three months; but when, at the end of that time, no benefit had resulted, he prepared definitely to retire from business. In August, 1923, his urine still showed a marked infection and there was abundant mucus in stools: general health very poor. The expert finally stated that at his age all that could be hoped for was to moderate discomfort, and that an inactive life was imperative.

On 1-8-23 started Abrams treatment with rapid and persistent improvement. Micturition became normal and the urine gradually cleared. Mucus in stools completely disappeared and at the end of five weeks he had returned to full business activity.

For last year or more had not had a symptom either of cystitis or colitis, in spite of the very active life of a busy man: no trace of mucus in stools since discharge.

Examined 13-10-24—nothing abnormal: appears very robust for his years; urine normal.

2. MARRIED WOMAN—*æt.* 45.—First seen in May, 1923, with a history of mucous colitis extending over twenty years. She had consulted very numerous doctors, including several who were specialists in the treatment of mucous colitis, and had spent six months at Lausanne under special treatment. She derived practically no benefit under all these treatments, and was despondent, and hopeless of obtaining relief; diarrhœa, with alternate constipation; stools never formed, and always mixed with mucus and occasionally blood; from time to time she passed casts of the bowel, was under weight, and looked ill and depressed. Her response to treatment by the oscilloclast was remarkable; after five treatments she had a solid well-formed motion—such a thing had not occurred for years; and at the end of a month she was having daily normal

motions. Seen a year later, she had had no return of the symptoms.

3. MARRIED WOMAN—*æt.* 50.—This patient presented herself on 25-4-24, with history of mucous colitis for eighteen years. The only relief during that time was obtained after a six months' course of treatment in Switzerland ; but the trouble recurred, and since August, 1923, she had never had a formed motion, but green slimy stools, alternating with constipation ; she complained of flatulence, depression and frequent nausea. Treatment started 4-5-1924, and after a week she felt distinctly better, and the motions were less frequent. After one month she stated that the symptoms were gone, and decided for herself, against advice, that further treatment was unnecessary. She declared she had not felt so well for years. Seen at the end of July, she stated there was still no sign of colitis, and she felt in excellent health. Last seen in September, 1924, she reported that occasionally she

passed a little mucus, and wished to have a few further treatments. General health maintained.

B.—Furunculosis:

MARRIED WOMAN—*æt.* 42.—Suffered for two years from furunculosis; she had counted altogether seventy-two boils; autogenous and stock vaccines proved of no avail in her case, nor did any of the lotions, ointments and medicines which she had used; colloidal manganese, and the preparations of tin had also given negative results.

She began treatment by the oscilloclast in March, 1924. At the end of six weeks the boils had disappeared, there had been no evidence of new ones, and her general condition markedly improved. The last report, in September, 1924, stated there had been no recurrence.

C.—Chronic Rhinitis:

MARRIED WOMAN—*æt.* 52.—For twelve years suffered from chronic nasal catarrh,

which had resisted every kind of treatment, including a long series of autogenous vaccines and two nasal operations. First seen in February, 1924. After six weeks' treatment her symptoms completely disappeared, and there had been no recurrence when seen 25-7-24.

2. MARRIED WOMAN.—Complained of very severe colds, recurring every few weeks, both in summer and winter, which frequently confined her to bed. Treatment was started at the end of May, 1924, and continued for five weeks. At the end of the first week she felt the beginning of her usual attack, but this did not mature and the symptoms subsided. Whilst under treatment, she had no recurrence, and at the end of July she wrote saying she had not had the slightest cold since, and that general health had much improved.

3. MARRIED WOMAN—*æt.* 40.—Suffered for ten years with nasal catarrh, from which she was never perfectly free.

First seen in January, 1924: there was general chronic congestion of the

mucous membrane of the nose, and it was quite impossible for the patient to breathe through the left nostril. After three weeks' treatment the discharge disappeared and she was able to breathe perfectly through both nostrils, which had not been the case for years.

It was of interest to note a very distinct alteration of appearance (fortunately for the better!) caused by the disappearance of the puffiness of the soft structures of the nose as seen externally. There has been no return of the condition, 20-10-24.

IV.—CASES OF THE ARTHRITIC TYPE

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THE subjoined account of certain cases of the arthritic type was furnished by a physician who has dealt exclusively with arthritis for many years; during which he has accumulated an exceedingly wide experience of the many and various curative measures which have from time to time been brought to bear on these obstinate conditions. In his opinion, internal iodine and intestinal disinfectants have proved very useful with the rheumatoid type, though improvement has always been slow and relapses common. In regard to the osteo-arthritic form he considers the outlook much less hopeful; they usually run a chronic course and do not respond very much to diet, vaccines, internal or external medicines, baths, or ordinary forms of electrical treatment.

This physician has treated over one

hundred and fifty arthritic cases by the Abrams method during the last nine months. Results have varied, but he is satisfied that he could not have obtained the same measure of success by any of the old methods, used singly or combined. He reports that among the cases so treated ten per cent. may fairly be classed as striking recoveries; fifty per cent. have benefited considerably; while in the remaining forty per cent. general improvement to health was fairly constant. Time, of course, alone can show how far these results are permanent.

The following cases are open to full investigation, as are the others in this book; but in addition, each individual of the series has promised to submit to a personal interview and medical examination if it should be required:—

1. MALE—*æt.* 54.—First seen November, 1922, complained of pain and stiffness in both hips.

Onset over ten years previously with left sciatica, at first intermittent; after 1914 pain more severe and constant.

Seen by surgeon in 1916, but definite arthritis was not found by X-ray. Exercise and massage recommended at that time. Condition became worse and a physician was consulted, who recommended the internal iodide treatment, but without improvement. General health became much worse and walking practically impossible. A third specialist could not suggest anything further. During this period the patient had tried the usual electric remedies, radiant-heat baths, ionisation, etc.

It was found, on examination, that the left hip-joint showed definite osteo-arthritis with considerable destruction of cartilage, confirmed by X-ray examination. A special ambulatory splint was advised, which allows free movement of the knee-joint, but at the same time takes up over fifty per cent. of the body weight on the tuber ischii. This was worn for about a year and a half with benefit to his power of standing for long periods on the Stock Exchange; but the condition remained active and pain was

pronounced. He had made repeated attempts to walk without it, but this was found quite impossible. Abrams treatment was started in February, 1924. After a fortnight the pain was so much less that the splint was discarded altogether. Since that time there have been occasional attacks of pain, but he has been able to stand for hours at a time, and has played golf for ten days consecutively. The grating has almost entirely disappeared, and he is at the present moment leading a normal life.

2. SINGLE WOMAN—*æt.* 62.—First seen September, 1923, complaining of severe pain in the right knee-joint.

Condition started about the end of 1922 with acute pain after kneeling, accompanied with swelling of the joint. On examination, the right knee showed marked osteo-arthritic change; the leg was contracted at the knee-joint, and it was quite impossible to straighten it. A weight-and-pulley extension, to be

worn constantly at night with knee-joint flexed, was advised. As there was very little change in January, 1924, Abrams' method was tried. The patient then could only walk a few yards with pain, and had to be almost lifted into a taxi; knee very swollen and oedematous. The response was certainly striking. After a week's treatment she was able to walk with comparative ease; and after a further three weeks' treatment had completely lost all pain: the swelling had disappeared and the leg was practically normal. There has been no sign of any recurrence during the last nine months.

3. MALE—*æt.* 30.—Severe case of infective arthritis. Onset in 1910 with a very acute attack of, believed, rheumatic fever; the patient becoming much worse in 1918, since when he had had many treatments. He had been to Harrogate twice, had vaccines, and teeth had been extracted, etc. The patient, first seen in March, 1924, was then

walking with great difficulty and in much pain, the knee-joints being very much swollen and full of fluid; while shoulders, elbow, and wrist showed marked stiffness and limitation of movement. This case was treated for four weeks, and sufficient improvement was obtained to warrant further treatment, which was resumed six weeks later. After a further three weeks' treatment the improvement was still more marked. During the last few months the patient has been able to dance and play tennis. There is still an excess of fluid in the right knee, but the general condition has vastly improved. It is rather a striking case, when it is considered that the disease had been getting steadily worse for six years.

4. MARRIED WOMAN—*æt.* 65.—First seen November, 1922, complaining of pain in both knees, especially after exercise.

Onset four or five years previously. On examination, well-marked osteo-arthritis of both knee-joints, marked grating and bony thickening: slight

bowing of the legs. This case was treated for over a year with very little improvement, every possible remedy that might be helpful being tried. As the patient was so much worse in January, 1924, Abrams' treatment was applied. This was continued for a month, and the result was slight, except that general health had improved. After a short rest the treatment was again commenced for another three weeks, but not much change could be detected, except that the knees were somewhat less swollen. The patient was seen about two months after the last treatment and the improvement was very pronounced. In August, 1924, she was able to walk with very little, if any, discomfort.

(The physician responsible for these cases states that, in his experience, it is rarely that osteo-arthritic joints of five years standing show much tendency to recover, and he is gratified with the progress of this case).

5. SINGLE WOMAN—*æt.* 56.—First seen

26-6-24. History of "rheumatic attacks" all her life. Operation on right breast for malignant disease (?) in November, 1922. Present illness started in 1918, and was thought to have been caused by a sprain of the left wrist. On examination, definite infective arthritis of the wrist-joint was found. The wrist, which was very swollen, was held quite rigid; and, if slightly flexed, sticky grating was felt, accompanied by intense pain. Abrams' treatment, with gentle exercise of the wrist, was given and the case was discharged after five weeks. There was marked improvement in the patient's general health, and when she reported 26-8-24 she said that she was using her wrist almost normally again. When one considers that this was a severe infective arthritic case of six years' standing, it seems worthy of note that it should have cleared up after so short a period of treatment.

6. MARRIED WOMAN—*æt.* 47.—General infective arthritis of two years' standing.

First seen January, 1924. Hands, wrists, elbows, shoulders, knees and feet were involved; the condition being one of subacute rheumatoid arthritis. After four weeks of Abrams' treatment the patient improved to a remarkable extent, and, in her own words, "felt better than she had done for many years." There is still a certain amount of deformity, but the pain is now almost negligible.

7. MALE—*æt.* 62.—First seen 13-5-24 complained of acute pain and swelling of metacarpo-phalangeal joint of right thumb. Onset in 1914 with a form of writer's cramp, but the history suggests that the arthritic condition had only been active about twelve months. Examination showed marked grating with bony thickening, pain on slightest movement, so that the patient was unable to use the hand, even to write. He was treated for four weeks, and at the end of that time the joint could be moved freely without pain, and he could do light gardening. Although the treatment has

not been continued since, the condition has steadily improved; the joint can now stand hard work without pain or inflammation.

8. MARRIED WOMAN—*æt.* 46.—In November, 1921, had a severe attack of sciatica, and, as condition threatened to become chronic, she went to Bath, where she improved to a certain extent under treatment, but was left with much "rheumatic" pain. First seen June, 1922. She was found to have a mild form of general osteo-arthritis, particularly well-marked in the left toe-joints. She was treated by general methods at regular intervals until February, 1924. The condition at this time was more or less chronic, and any improvement that occurred was not maintained. It was decided to try a few weeks of Abrams' treatment, which was started in April, 1924, and continued for four or five weeks. At the end of this time the patient had improved very much, and was able to do

quite a large amount of hard physical work without harm.

14-10-24: reported to have maintained improvement.

9. MALE—*æt.* 73.—Past history of attacks of "rheumatism" and synovitis. Present illness started about six months previously, with acute pain in right shoulder-joint. On examination, October, 1923, right arm wasted and held rigidly to the side; very little movement possible owing to pain; on slight rotation, marked grating detected, due to erosion of cartilage. Patient had tried most remedies for rheumatism, gout, etc. Case diagnosed as definite osteo-arthritis, and treated with radiant-heat baths and iodide of potassium internally. As there was very little improvement by January, 1924, it was decided to try the Abrams treatment. The patient was treated for a month; and after another month of gentle massage and movement, the arm could be used quite normally. There has been no recurrence.

10. MARRIED WOMAN—*æt.* 54.—First seen in January, 1924, with a history of acute pain in the shoulder-joint, for which various treatments had been given over a period of two years. The arm was held firmly to the side, and movement was very restricted. There was marked grating, evidence of adhesions, and considerable disuse-wasting. In such cases there is always the possibility of a habit of immobility having supervened upon a healed lesion, but in this case the process was still active.

The result of three weeks' treatment by Abrams' method was negative; but after change of air the treatment was recommenced for four weeks. At the end of the second period, pain had almost entirely disappeared; and after a short course of massage and exercise the shoulder movements became practically normal. There has been no recurrence.

11. SINGLE WOMAN—*æt.* 55.—Never strong. Developed infective arthritis thirty years previously in right big toe,

which gradually spread to wrist, neck and elbow-joints.

First seen September, 1923, presented a typical picture of rheumatoid arthritis, the joints chiefly affected being elbows, shoulders, and knees. Some swelling was present. General health very poor. Blood pressure 100 mm. Hg. She had undergone many treatments with no permanent improvement. Iodine and Hormotone, with Plombière douches three times a week, were tried, but there was no benefit to record by December, 1923. Abrams' treatment was applied in January, 1924. At the end of six weeks the patient had gained considerably in weight and the joints had improved remarkably. Swelling and other evidence of activity disappeared. Many movements returned which had not been possible for ten years.

12. MARRIED WOMAN—*æt.* 47.—Suffering from rheumatoid arthritis of hands and feet. Onset two years ago, since when condition had been steadily pro-

gressive. The hands, feet, and wrists were swollen and tender, especially over the tendons at the wrist-joint. Abrams' treatment was started in June of this year and continued for six weeks, at the end of which period there was marked improvement in the joints, the swelling and tenderness had decreased very considerably, and pain was a negligible factor. The patient's health improved steadily throughout the treatment, and is now better than it has been for many years.

13. SINGLE WOMAN—*æt.* 52.—Shop-assistant. Severe infective arthritis affecting fingers, wrists, and knees. Onset in 1918; had been unable to work for over a year.

First seen March, 1924; the knee-joints were very inflamed, and large fluid swellings were present which very much interfered with walking. Both wrists also showed ganglionic swellings. The case was treated with rest and intensive iodine treatment for four months, without any improvement. Abrams' treatment

was started in August, 1924, and continued for six weeks; at the end of which time the swelling of the wrists and knees had considerably diminished, and the hands can now be used almost normally. The knees are still weak, but steadily gaining in strength, and there is every hope of this patient being able to return to her work in a few months' time.

V.—MALIGNANT DISEASE

V.—MALIGNANT DISEASE

NOTHING has so much offended the commonsense of the medical profession as the statement, made in certain sections of the American lay press, that Abrams had discovered a cure for cancer. So wild a statement, made without the elapse of many years to justify it, bears the impress of absurdity so soon as it is written. It is only fair to say that Abrams was distinctly guarded in the matter; and, indeed, on this subject showed a modesty that was hardly habitual.

It should at once be stated that the examination of a number of cases of inoperable cancer treated by the method, and the investigation of their subsequent history have not convinced the writer that there is any reason at all for discussing the question as to whether "cures" occur. No certain evidence was forthcoming that the growth itself

is in any way affected by the methods advocated by Abrams.

At the same time, it must be acknowledged that in a certain number of instances where the general health of a cancer-patient was exceedingly low, a curious and striking phenomenon seemed to occur coincidently with the application of the oscilloclast. It is impossible to estimate exactly how far revived hope in the apparent possibility of cure may temporarily restore a patient's vitality; but cases were examined in which a stone or more of weight had been recovered in a comparatively short time, where pain had disappeared, and vigour had so far returned, that the patient was tempted to consider himself well. Examination revealed the presence of the growth, and the subsequent history showed that its development had not been checked. It may be a matter of opinion whether suggestion can explain such occasional marked objective improvement; but it seems more reasonable to conjecture that the stimulus to general

health, observed in other directions, may sometimes prove so powerful that even in a late stage of cancer it is able for a time to make headway against the pernicious effects of the growth.

The following cases are brought forward to illustrate this phenomenon of general improvement, which has, in fact, proved more lasting than in the great majority investigated. In each case the diagnosis appeared reasonably certain, but even if it were incorrect in every instance, these cases may still support the contention that one is dealing with a remedial agent the effects of which are often very objectively manifested in serious illness.

1—Carcinoma Recti:

MALE—*æt* 59.—First seen 3-12-22: stated that for eighteen months he had been in very poor health; he complained of loss of appetite, diminishing weight and continual pain in the rectum and abdomen: for some time there had been oozing of blood from

the rectum, and increasing difficulty in defæcation. His doctor made a diagnosis of carcinoma recti, which was supported by a consultant. A third opinion to the same effect was obtained, and an immediate colostomy recommended. This the patient absolutely refused, and treatment by Abrams' method was started on 8-12-22. He was so weak and in such pain that he questioned whether he could attend each day. After five days' treatment he stated that pain was relieved, and on 16-12-22, had a normal motion, the first for eighteen months, and was found to have gained 3 lbs. 11 ozs. On 19-12-22, the oozing from the bowel stopped, and the improvement in his appearance was quite remarkable. On 29-12-22 there was still no return of pain, he had gained more weight, was most cheerful, having normal motions, sleeping well, eating well and looking well. He was dismissed from treatment on 2-2-23.

On 17-4-24, he reported that he

had had no further trouble since treatment finished. This patient, seen in August, 1924, paid merely a friendly visit to show how well he was.

2.—Carcinoma Recti:

MALE—*æt.* 52.—Had complained of constipation and indifferent health for some months. He consulted his doctor, complaining chiefly of pain and difficulty in defæcation. On examination, a tumour was found in the rectum; two surgeons were consulted, and confirmed a diagnosis of carcinoma. Colostomy was recommended, but refused by the patient, when it was explained that the growth was no longer operable.

On examination, a mass was felt by the finger in the rectum, so large that it was surprising there was not complete obstruction. General condition poor; haggard and emaciated.

Treatment was started 22-5-24: at the end of three weeks there was a distinct improvement; solid motions were passed, and at the end of six weeks

the patient felt and looked remarkably well. At the end of two months' treatment he declared he was no longer "conscious of his body," and that he felt perfectly sound. The tumour could still be felt, but there was no difficulty in defæcation, and the stools were normal. He gained weight, and in appearance no one could judge that he was other than a perfectly healthy man. Treatment stopped on 9-8-24, and on 8-9-24, he made a personal visit, to report that he was keeping well, and the same report was made on 2-10-24.

3—Carcinoma Mammæ:

MARRIED WOMAN—*æt.* 50.—Presented herself in August, 1923. She had had her right breast removed for cancer in 1913; and had remained fairly well until the beginning of 1923, when she noticed a swelling over the site of the operation-scar, accompanied by œdema, and pain in the right arm, and she was very breathless on exertion. Her doctor stated that there was a recurrence of

malignancy, and that her right lung was involved. She had intensive X-ray treatment, which proved of no service. The case was unwillingly undertaken, and only on account of the importunity of her friends. The axillary glands, as also the glands under and above the clavicle, were considerably enlarged : there was no expansion of the right apex ; she was breathless after even a short walk on the level, and it was impossible for her to mount stairs. She was discharged after two months' treatment by the oscilloclast, and showed great general improvement. On 27-1-24 she wrote : "I gained 3 lbs. weight last month, and seem to be better every day ; I can go upstairs now without being very much out of breath; in fact, except that I tire easily, I am almost my old self again."

On 7-4-24 the patient came for examination, and she was found to have improved in every way. She was able to climb stairs without undue loss of breath, the apex of the right lung

appeared almost normal, the glands were reduced in size, and the pain and swelling of the right arm had gone. It is to be added that late in April, 1924, this patient died, the cause of death being certified as pneumonia.

4.—Carcinoma Recti:

MALE—*æt.* 58.—First seen in October, 1923; stated that he found the greatest difficulty in emptying his bowels, was losing weight, and feeling below par. His doctor had diagnosed inoperable cancer of the rectum, and he was seen by a surgeon, who advised colostomy; this he refused, and treatment by the oscilloclast was commenced on 2-10-23. An improvement was noticed at the end of the first week, when he passed, with little difficulty, a normal motion; at the end of two months' treatment the tumour was estimated to have actually diminished in size, and normal motions were being passed each day: he had gained weight, and declared that he felt perfectly well, and was going back to

his business. Nothing further has been heard from this patient.

5.—Carcinoma Recti:

SINGLE WOMAN—*æt.* 62.—Carcinoma first discovered in August, 1922; colostomy performed in September, 1922. Patient came in January, 1924, having completed a course of deep X-ray and diet treatment. She was in great pain and using morphia suppositories night and day; *per rectum*, it was very difficult to insert the finger, owing to the downward pressure of a mass of growth. This could be felt attached to the back-wall of the pelvis, and it was impossible to pass the tip of the little finger through the stricture; the case was obviously beyond the stage of surgical interference. After two weeks of Abrams' treatment, the pain was lessened to such a degree that the patient was able to give up the morphia suppositories at night; after a month, the hæmorrhage and pain had almost ceased and the patient felt very much better. She

has had treatments once a week or fortnight up to the present date, 20-10-24. The general health has improved in a striking manner, there has been no further loss of weight, and she is able to walk miles without feeling tired.

When this patient was first seen it was not anticipated that she would live more than two or three months at the most, but after nearly a year she is more than holding her own. Her own doctor has examined her on several occasions, and is much impressed with the general betterment of her condition.

VI.—MISCELLANEOUS

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1.—Exophthalmic Goitre:

A. Married Woman—*æt.* 32.—First seen on 5-5-22. All the cardinal signs were present, and all remedies, including two months' rest in bed, had failed. Under treatment, at the end of the month, tremors had gone, the heart-rate was normal, the swelling in the neck scarcely perceptible, and exophthalmos not apparent to the casual observer. She married again in June, 1922, and when last heard of, in July, 1924, she had remained well.

B. Single Woman—*æt.* 26.—Came for treatment in August, 1923. Medical measures proving useless, an operation had been performed in January, 1923, and part of the gland excised. Symptoms continued, however; she complained chiefly of palpitation and great fatigue on slight exertion, and had lost a good deal of weight. Under Abrams' method

she rapidly improved, and in less than five weeks was discharged free from tremors and palpitation, having gained in weight and looking well. She was married some few months later.

Satisfactory report 14-10-24.

C. SINGLE WOMAN—*æt.* 30.—Came up from the country in October, 1923, suffering from exophthalmic goitre, to know if anything could be done to avoid an operation. This had been recommended in view of the failure of medical measures.

At the end of four weeks of Abrams' treatment she was discharged free from symptoms; while a marked diminution in the size of the gland was noted.

In May, 1924, she wrote to say that she had more than maintained the improvement in her general health, and felt quite well; the swelling in her neck was scarcely noticeable.

D. MARRIED WOMAN—*æt* 52.—In 1909, uterine hæmorrhage; and a diagnosis of endometritis was made by her doctor in Rome. The hæmorrhage returned at

intervals, and in 1910, Professor Bastianelli discovered a uterine fibroid. In 1911, the hæmorrhage was increasingly frequent, and was accompanied by a gradual increase in the size of the tumour. In 1912, the fibroid was found by Professor Frascella to be considerably increased in size; and a progressive enlargement of the thyroid was noted at this time. In 1915, the fibroid had still further increased, but operation was not suggested because of the goitre. In that year the patient had two months' X-ray treatment in Paris, without benefit. In March, 1916, two further months' treatment by X-ray; and the fibroid was found to be multiple. She now lost considerable weight, and became very weak and debilitated, so that any sort of active life was impossible. In 1921, the cardinal signs of exophthalmic goitre developed, while the tumour had increased to a great size. The case seemed almost hopeless, and it was felt that the patient might not be able to travel to London.

Treatment began in September, 1923;

on examination, great prostration, marked tachycardia, typical fine tremors, enlarged thyroid : exophthalmos. There was a large mass the size of a Rugby-football in the abdomen, which suggested that of a woman in the eighth month of pregnancy. The response to treatment by the oscilloclast was curiously rapid ; the tumour became unmistakably smaller, so that at the end of a month her clothes had to be altered ; at the same time the pulse rate dropped below 100, the tremors were less pronounced, and the goitre much smaller. At the end of ten weeks' treatment she was discharged ; the tumour was still palpable, the size of a cricket ball, but the symptoms had disappeared, and the patient now felt well. She returned to Rome, and on 29-11-23, wrote in warm terms of her return to normal health and work, after more than twelve years of disability.

The latest report, dated September, 1924, is that she is still free from symptoms, and working hard all day.

2—Cerebral Tumour:

GIRL—*æt.* 17.—Towards the end of 1920, after influenza, complained of double vision: a few weeks later headaches and vomiting developed. In March, 1921, she became much better and it was not until November, 1921, that there was a recurrence of headaches; these symptoms continued until February, 1922, when they increased in severity, and a squint was noticed in one eye. An oculist, after examination, urged her speedy admission to the local hospital. She was, however, brought to a London eye-hospital, where a diagnosis of cerebral tumour was made; and thence to a leading general hospital, where the diagnosis was confirmed, and she was kept as an in-patient for three months. The question of operation was discussed, but so little hope of a successful issue was held out, that the friends of the patient refused to consider it. She left hospital, and was taken to see a well-known neurologist, who confirmed the diagnosis, and sent her as an in-patient

to a London hospital for nervous diseases. She remained there from April, 1922, till August of the same year as a bed-patient; showing acute headache, vomiting, frequent seizures and progressive impairment of vision, due to optic neuritis. The cardinal signs of cerebral tumour were present. She suddenly became blind, and the seizures grew in frequency. Operation was still not considered advisable, and no hope was held out. Her friends took her home, preferring that she should die there. A statement in writing was made that it was not possible to entertain any hope that treatment by the oscilloclast could be of service, but such was the importunity of her relatives, that a short trial was undertaken. When first seen in October, 1922, she was not able to walk or stand: she had acute headaches, vomiting, frequent seizures, vertigo; speech halting and indistinct; she was quite blind, pupils not reacting to light, and complained of intense neuralgic pains in her right arm, spine and the side of her face. Towards the

end of the second week of treatment, definite improvement began; gradually the vomiting and pain ceased, the seizures became less frequent and then stopped. At the end of a month she was able to walk without assistance, and at the end of ten weeks' treatment she was perfectly well in every respect, except for vision. Double optic atrophy had been diagnosed, and no change seemed possible in that respect, but as a matter of fact, towards the end of her treatment, she was able to appreciate light, to distinguish colours, and see fingers. She was dismissed from treatment, and taken to see one of the many consultants who knew her case.

The patient was again seen in May, 1923; she had continued in excellent health, and there had never been any recurrence of her former symptoms; her vision had not further improved. A report was received on 22-5-24, stating that with the exception of her sight, the patient remained perfectly well and free from symptoms.

3.—Undiagnosed:

SINGLE WOMAN—*æt.* 20.—Had suffered for nearly twelve months from almost daily prolonged attacks of severe pains of a boring and lancinating character in the head and ear. This followed an acute febrile attack of the influenzal type. Morphine and heroin in increasing doses alleviated the pain, but were productive of the usual unpleasant after-effects. Otitis media or mastoiditis were suspected, but these were negatived by three aural specialists. X-rays showed non-erupted wisdom-teeth, and the lower right wisdom was removed under an anæsthetic, with relief from pain for a day or two. On the return of pain the adjacent molar was removed, without giving relief, and the right antrum was explored. It being suggested that the sphenoidal sinuses were affected, a special X-ray photograph was taken, which seemed to exclude the possibility; mercurial inunctions and iodide of potassium internally had been tried, without result; while application of leeches over

the mastoid gave no relief whatever. The patient had been seen by over thirty specialists of various kinds, who were all unprepared to make any definite diagnosis. Towards the end of October, 1923, two leading neurologists and a leading surgeon were consulted; and they agreed that the pain had an organic foundation, and that a functional condition could be definitely ruled out. It was suggested that Arnold's nerve was involved, and it was agreed to excise that nerve. The operation was successfully performed, but relief from pain was only temporary, and at the end of a week it returned in full force. Diathermy, deep X-ray application, and radiant heat appeared to exacerbate rather than relieve it. Since everything had failed, it was decided in January, 1924, to try treatment by the oscilloclast, although no hope was held out that such treatment would be of service. Treatment started on 7-1-24, and at the end of a week there was definite improvement. At the end of a month,

the patient had been without pain for eleven days, and had put on weight; she continued to improve, with occasional recurrences of pain, but of less intensity. During January, her nurse recorded "hours of pain, 137"; during February "forty hours"; during the first week of March "eleven hours"; the second week no pain at all, and but two hours more pain up to the end of the month. The patient was then able to travel, and went abroad. Excellent reports were received from time to time, although there were occasional reminders of pain. However, she is now perfectly well and normal in every respect (15-10-24).

It is to be noted that this patient started treatment with the utmost scepticism as to its efficacy.

4—Asthma:

SINGLE WOMAN—*æt.* 18.—First seen in July, 1923, with history of recurring attacks of asthma during the previous eight years. She had only obtained temporary relief from the many remedies

prescribed; it was impossible for her to play games, or to exert herself in any way, because a severe asthmatical attack was sure to follow. She did not commence treatment until the end of November, 1923, and at the end of two weeks, there was marked improvement in her condition, she having had only one slight attack. She was dismissed from treatment at the end of a month, and said she had more freedom in breathing than she had had for years, was sleeping well, and felt better in every respect.

Seen 26-6-1924, she had become quite robust, and had not had a single attack of asthma since the termination of treatment, although now engaging in various athletic activities.

5—Migraine:

SINGLE WOMAN—*æt.* 56.—Had suffered for at least ten years with severe migraine, the attacks occurring almost every week, accompanied by depression and nausea.

She had been under the care of the

practitioner for many years, and he had never been able to modify the attacks by any remedial measure, and other advice had also been sought without avail.

Abrams' treatment was given for six weeks in January and February, 1924; she improved very much in health and the headaches became markedly less frequent. She left England for several months, but came to report, 6-10-24, that she had not had a severe headache since she stopped treatment, and that she felt in better health than she had been for many years. Blood pressure in January was 155 mm.: on 6-10-24, 130 mm.

VII.—THE EXPERIENCE OF A GENERAL PRACTITIONER

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THE subjoined account of his first ten consecutive cases treated by the Abrams method, was compiled by a general practitioner with a large practice in one of the principal provincial towns, and is interesting as coming from one with ripe experience of general medicine. His name has been withheld, but he has expressed his willingness to be put in touch with any medical man who is sufficiently interested in the subject to enquire in regard to any of the cases described. The details of this series have not been checked by the author of this book, but the repute of the writer suggests that their accuracy may be relied upon. All the cases were treated in the latter part of 1923 and early 1924.

"My interest in Abrams' method," he writes, "was first seriously aroused by reports of some cases treated in

London, which I took considerable pains to verify. These, combined with the condemnation of the method by the leaders of the profession, made me wish to have a first-hand acquaintance with it and to form an opinion for myself. I have been watching results for over a year and personally practising the method for over ten months. Such a period is much too short for me to make any dogmatic statements, but I can, 'without prejudice'—as our legal brethren say—, give my impression of the ten months' work.

"I had previously had a fair knowledge of Abrams' writings, and generally regarded them as rather Americanesque, requiring additional confirmation in many particulars. That feeling has been maintained by further acquaintance with his theories and methods. But, remembering Aristotle's advice when presenting a thesis, I separated Abrams' theory very strictly from Abrams' practice; and the question I set out to solve was, 'Will the Abrams apparatus *do* things?'

"THE ABRAMS TREATMENT"

"I have no hesitation in giving an affirmative reply. As an old practitioner with a practice that I had worked in for over thirty years, I had abundant material to select from. I chose 'derelicts' of different types, in which orthodox treatment had failed. In every case I had the diagnosis verified, either (a) by the leading local consultant in the special disease; (b) or by the X-ray examination of a hospital radiologist; (c) or by residence at a local hospital, in which cases the hospital diagnosis was accepted as accurate."

The cases described below are the first ten which I treated, and are not picked out, but quoted in series as they came to me:—

1—Pulmonary Tuberculosis:

Miss I.—*æt.* 26.—Secretary to local doctor. In 1920, operation for appendicitis; followed in same year by operation for adhesions. Ever since had suffered from abdominal pains.

In 1923, complained of weakness, loss

of appetite and shortness of breath. X-ray examination confirmed a diagnosis of tuberculosis of both lungs. Under treatment she gained 18 lbs. in sixteen weeks, appetite became normal, abdominal pain ceased, and patient stated that she never felt in such good health in all her life.

10-10-24, very favourable report.

2—Ptosis of Eyelid:

Mr. S.—*æt.* 35.—Grocer. Syphilis five years previously. Was treated for three years by modern methods. Ptosis of left eyelid developed, and gradually grew worse in spite of treatment. Wassermann remained positive.

Abrams' treatment was started and other treatment discontinued. Eyelid became quite normal, and has remained so.

8-10-24, no symptoms. (A curious fact, that the Wassermann became "completely negative," is no doubt a coincidence).

3—Asthma:

Miss C.—*æt.* 23.—No occupation. Asthma since childhood. Tried many methods of treatment, orthodox and unorthodox. Intranasal operation by London aural specialist. Had intravenous injection of peptone. Tried change of towns and varieties of climate, but symptoms always came back on return to native place. Tried a well-known American asthma cure. Tried herbal medicines supplied by an astrologer (!).

Abrams' method almost immediately gave relief. I do not regard her as cured; but she has not had an attack of asthma since, although there is slight wheeziness during menstrual periods, or if she has indigestion. (Very favourable report on 4-10-24.)

4—Fibroid Tumour of Uterus:

Miss L.—*æt.* 40.—Music-teacher. Pain and hæmorrhage for two years, and in spite of treatment grew so much worse that operation had to be considered.

Another doctor was of opinion that operation was inevitable.

Under Abrams' treatment hæmorrhage ceased in three weeks, and has not returned since. Periods normal. Pain, previously constant and sometimes severe, has diminished and is now usually felt only at periods. Described as "only a niggle when it comes." General appearance much improved.

An interesting side-issue in this case was the fact that seven months previously an eye-specialist had found commencing cataract in both eyes. Cataracts have completely cleared up, a result which has been verified by the same eye-specialist who made the diagnosis.

8-10-24. Very well.

5—Menière's Disease:

Miss B.—*æt.* 46.—Clerk. In 1912, had to resign from post-office telegraph service on account of deafness, on the advice of a well-known London aurist. Later for two years under ear-department of local hospital. No benefit from

treatment. Went into hospital for two days for special investigation, but was discharged as hopeless. Diagnosis confirmed by two experts independently. Symptoms typical.

Treated by myself with intramuscular injections of hypochlorites with a good deal of benefit, but relapsed in six months. Renewed injections failed, and patient had severe attacks of vomiting.

Under Abrams' treatment hearing began to return in about a month and is now quite good. All other symptoms have ceased except tinnitus, which is slight. Described herself when last seen as in better health than she had been for years.

8-10-24, in excellent health.

6—Carcinoma of Rectum:

J. R.—Clergyman.—*æt.* 52.—I should not have felt justified in taking a case of this type; but patient absolutely refused operation and earnestly requested me to try Abrams' method.

It was noted that pain always ceased

about twenty minutes after treatment began. After over two months' treatment, there was, as far as I could judge, no result, good or bad. He still refused operation, but, at the request of his friends and myself, went to the Radium Institute.

Later was persuaded to submit to operation.

7—Epilepsy :

Mr. J. B.—*æt.* 50.—Bacon-trimmer. Had suffered from epilepsy for twenty years. For three years was out-patient at the local hospital, but in spite of treatment had almost daily attacks. Became habitually morose, and frequently threatened suicide.

Ten years ago borax and bromide were tried with a little improvement. Four years ago luminal tried, with some diminution in number of attacks, but without improvement of mental outlook.

Under Abrams' method had not a single attack for over four months. His mentality so far changed that he became

quite cheerful. I was jubilant and made up my mind to dismiss him, when to my intense chagrin he had a fit in my own consulting-room. He was so disappointed that he would have nothing to do with me for a time. He grew worse, and in two months came back again. He again improved, but in six weeks he had several attacks and again in disgust threw me over. If he returns again I shall have another try, and again report the result.

8—Benign New Growth :

Mrs. B.—No occupation. New growth the size of an orange under upper part of pectoralis major and projecting into axilla. Moderate pain and some difficulty of movement. On my advice was treated on and off for about two years by X-ray. This distinctly reduced the size of the growth, eased pain and increased mobility. But whenever the treatment was discontinued the growth increased in size and the other symptoms returned.

After a time the radiologist intimated

that he could do no more, and, as the growth increased in size, I proposed a trial of Abrams' method. Under this treatment a definite diminution in size occurred, and the last time I saw the patient mobility was normal and there were no symptoms of any kind. Any prognosis in this case would be premature.

October 6th, 1924, favourable report.

9—Paralysis Agitans:

Mrs. C.—*æt.* 55.—No occupation. In my practice I have about twenty cases of paralysis agitans; and as this case was of old standing and moderately advanced, I explained to the patient that, while nothing on earth could restore the organic lesion in the corpus striatum, it would be interesting to see whether the treatment would have any effect at all. I cautioned the patient many times about the element of suggestion in any new treatment, and as she was particularly intelligent we both entered the experiment with zest.

The net result of the trial was as follows :—The tremor was undiminished. Her general strength and walking were improved, as also the attitude and gait. Rigidity was less. All the subjective symptoms improved (but here, of course, suggestion may have been entirely responsible).

Her husband who was interested in the experiment, is emphatic as regards the general improvement ; while the patient herself is much more satisfied than I am.

8-10-24, no change: improvements maintained.

10—Chronic Abscess of Maxillary Antrum:

Suffered from unexplained pain in head and face for several years, till suppuration was discovered in maxillary antrum. Had several teeth extracted and antrum washed out, but discharge continued. In view of this, more extensive surgical interference was suggested, but refused.

With Abrams' method the discharge completely dried up. Patient put on a little weight and improved in general health and appearance.

8-10-24, remains well.

VIII.—EXPERIMENTAL CASES

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THE writer's experimental cases include five with persistent high temperature (two of these tuberculous), two other cases of tuberculosis, a few chronic local infections, and a number of cases in which the neurotic element was pronounced. These last were frankly disappointing, and it was soon found useless to test the effect of the treatment in the purely psychic type of case. A different prospect arises when there is actual nervous exhaustion. It seems to be not without significance that the class of patient most likely to be helped by measures of high suggestive value should benefit very little under Abrams' method.

In all the cases described, a general practitioner of high standing in the profession, with no knowledge of Abrams' doctrines, undertook the general care of the patients, checking the findings at all stages of treatment.

The details are as follows :—

1—Tuberculosis:

MALE—*æt.* 33.—Mother died of tuberculosis. He was always delicate; one of nine children, seven of whom died of tuberculosis about the age of twenty-five. Twelve years ago developed pleurisy, and after that a very chronic process started affecting the right lung; had every sort of treatment.

March 1st, 1924; Recently "pain in left lung"; occasional red coloration in sputum during fits of coughing; fears left lung is now affected. Right chest much flattened, and movements impaired. Signs of consolidation and cavity at R. apex. Rhonchi R. apex in front and all over back of R. lung. L. apex, prolonged respiration, crepitations, and a few rhonchi. Much sputum. Working only for an hour or two daily for some months.

April 7th, 1924; After a month's outpatient Abrams treatment* "no rhonchi

* The term "Abrams treatment" in this series denotes only the application of the oscilloclast.

or crepitations on left side ; R. lung drier, otherwise no change" ; weight not increased.

April 8th, 1924, Has gained 3 lbs. in weight, very little sputum.

June 8th, 1924 ; Total gain of weight 4 lbs. Doing almost full work and feeling very well. No sputum or cough.

Reported July 9th, 1924, and August 18th, 1924, that gain of weight was still retained in spite of heavy work.

2—Tuberculosis:

MALE—*æt.* 37.—Bad family history ; one brother died of tuberculosis, another affected severely; delicate and thin as a child, but fairly healthy until October, 1921, when he had night-sweats and irritating cough ; loss of weight. Well-known consultant diagnosed pulmonary tuberculosis. T.B. in sputum, and at every succeeding examination.

July, 1922, after "sanatorium treatment at home," condition had not cleared up ; went into a sanatorium,

made some improvement, but T.B. still plentiful in sputum.

November, 1922, some recurrence; evening rise of temperature. Pneumothorax treatment tried, but imperfect owing to pleuritic adhesions. In summer, health fair; but in November, 1923, started high temperatures with fluid at R. base; laid up for three weeks then got about again. From December, 1923, to date of admission, continuously in bed with temperature varying between 100° to 103°, rarely as low as 100°. On admission: hectic facies, emaciated, weight 7 st. 8 lbs. Signs in R. chest masked by pneumothorax. In left apex some small crepitations. Evening temperature about 100°; very severe cough. ℥iii. sputum per day. Brother (a medical man) writes that everything has been tried and patient cannot live many months. Abundant tubercle bacilli in sputum.

Abrams' treatment started February 25th, 1924. Evening temperature gradually dropped to normal in a week; did not exceed 99° for eleven days.

March 20th, weight 8 st. 3 lbs. March 27th, 8 st. 4 lbs. April 10th, 8 st. 6 lbs.

Noted on April 8th, 1924, "appearance extraordinarily improved; eating and sleeping well."

Started exercising too soon, with temporary rise of evening temperature; but on April 28th, 1924, temperature became completely normal and so remained. Exercise was gradually increased until he was discharged on May 20th, 1924. He was then walking five miles daily, weighed 8 st. 6 lbs. (he had never weighed more in his life). Sputum diminished to 3ii. per day; cough slight.

It was interesting to observe (1) that he did not have a single night-sweat after treatment had started, though previously they had been three to four per week. (2) chronic conjunctivitis and phlyctenular ulcer of R. eye, which had given continuous trouble for five months, cleared within a week of treatment.

Reported a month after discharge that he was very well and sputum had practically ceased.

August 18th, 1924. Improvement maintained in every respect, but tubercle bacilli still present in sputum.

3—Malignant Endocarditis.

MALE—*æt.* 57.—Healthy until early in 1924, when, after influenza, he started an intermittent temperature; a rigor occurred more or less every third day, generally with temperature about 101°; on six occasions reaching or exceeding 102°. Malaria was suspected at first, though he had never been abroad, but later malignant endocarditis was diagnosed, and this was confirmed by a leading consultant. He was intensely emaciated: numerous petechiæ: heart enlarged, but sounds normal; urine solid on boiling. No organisms found in blood. Diagnosis again confirmed by two independent physicians.

He began treatment by Abrams' method May 14th, 1924. Some slight general improvement occurred in the first month, but the temperature remained high; after this it gradually

and regularly fell, so that at the end of six weeks it became normal and remained so for twenty-one days. Great improvement was manifest in the patient's general condition. The albumen in the urine had gradually declined till at this time it was absent and did not return.

After this a period of modified temperature set in, rarely rising above 99°, and the patient was less well; thrombosis of a small vein developed. However, after a few weeks the temperature became regularly normal and had not risen at all during the last ten weeks.

A satisfactory clinical result was not anticipated in this case; for though the patient felt moderately well in bed and ate well, there were unmistakable signs of a severely damaged myocardium.

(Noted a month later, cardiac failure became very pronounced on leaving the nursing-home, and patient died. There was no further pyrexia).

The interest of the case lies in the

temperature-chart which shows the disappearance of the febrile process. This is given opposite, in diagram, and forms a record extending over a period of six months.

4—Pernicious Anæmia:

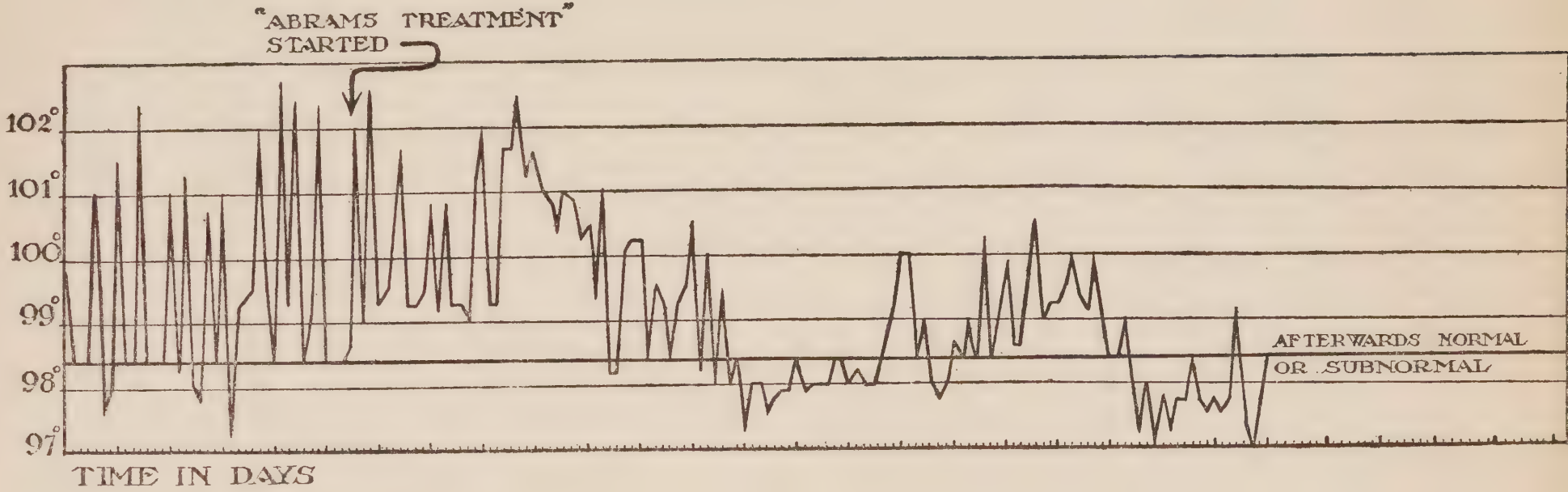
FEMALE—*æt.* 45.—This case, in a late stage of the disease, was treated at the earnest request of the relatives for a brief trial period; when no result was apparent she was discharged, and died shortly afterwards.

A curious point, however, is worth recording. Previously to admission she had had an evening temperature of about 100°, practically without an evening's intermission for three months. Immediately on commencing treatment the temperature remained normal for ten days. Unfortunately the chart of this case has passed out of the writer's possession.

5—Tuberculosis:

MARRIED WOMAN—*æt.* 42.—Mother

CASE III (EXPERIMENTAL)



died of tuberculosis. Early in 1921 a hæmoptysis occurred which was not enquired into. In summer of 1922, slight pleurisy, and active tuberculosis diagnosed in R. apex; sputum positive. After three months in bed she improved a little, but persistent diarrhœa with much mucus and occasional blood developed. In February, 1923, took permanently to bed, and for fourteen months had evening temperature rarely less than 100°. She was under medical attention all the time and her condition was regarded very gravely. On examination May 4th, 1924; emaciated: weight 6 st. 7 lbs.; signs of active disease R. apex. Abdomen very tender: some fluid; blood and mucus in stool examined. Motions every two hours during day containing tubercle bacilli: pulse 100-130. Has been a bed-case since February, 1923.

Treatment started May 6th, 1924. For three weeks no change, evening temperature often exceeding 100°. Persistent diarrhœa and abdominal pain.

In fourth week definite improvement took place and 4 lbs. was gained in a week. Thereafter a slow increase in weight commenced, and the temperature very gradually declined. After two months no signs of activity in apex; diarrhœa markedly less.

At end of third month she got up a little; and on discharge, August 10th, 1924, was able to walk round the garden without ill effect. Weight seven stones. Appetite good. No tenderness over abdomen (examination of sputum not made).

Immediately on discharge gained 7 lbs. in three weeks, and by October 14th, 1924, her weight was 7 st. 12 lbs. Temperature practically normal: is now able to take short walks without harm.

6—Malignant Endocarditis:

MALE—*æt.* 52.—Typical picture; exceedingly ill on admission. Had travelled from a distance or treatment would not have been attempted. Multiple large petechiae; blood in urine; pulse 100-140.

Intensely emaciated. Died on fifteenth day after admission.

Declension of the temperature occurred in this case by regular fractions of a degree from 102.2° on the first day to normal on the fifth; after this a few trifling rises only occurred up to the day of death.

7—Tuberculosis:

MARRIED WOMAN—*æt.* 34.—Seven years ago had left ovary and both tubes removed for salpingitis, believed tuberculous. In February, 1923, appendix and right ovary removed. Has never felt well since and the whole of the summer of 1923 she went about in a bath-chair. On examination, she was found to be in a very debilitated condition; unable to walk even a short distance without dyspnœa and palpitation. Numerous scars on the neck where tubercular glands had been removed when she was a girl.

Commenced Abrams' treatment May 13th, 1924. Steadily improved and was

discharged on July 23rd, 1924, feeling quite well and able to walk almost any distance with ease.

(8)—Chronic Rhinitis:

SINGLE WOMAN—*æt.* 38.—Landed in this country from Australia four years ago. Caught a nasal cold a few days afterwards. This developed into a chronic rhinitis, which never disappeared for a single day and was always worse at her menstrual periods. Had had every kind of treatment from home remedies to vaccines, but all without the slightest effect.

Commenced Abrams' treatment March 12th, 1924, and at the end of a fortnight all the rhinitis had completely cleared and it has not returned to date, October 8th, 1924.

(9)—Early Arthritis:

MALE—*æt.* 53.—Seen on February 9th, 1924, complained of pains in shoulders for four months; a fortnight ago the metacarpo-phalangeal joint of the right

little finger began to be affected. His systolic blood pressure was 180, and his second aortic sound was very accentuated. Under ordinary medicinal and dietetic treatment his pressure came down to 155; but his knees became affected and his shoulders did not improve.

He started Abrams' treatment on May 12th, 1924, and made steady progress from the outset; so that by September he had lost all his pain and was sleeping well every night. He was discharged, feeling quite well.

October 10th, 1924, satisfactory report.

Emphasis is laid on a curious point in connection with cases 2, 3, 4, 5 and 6, all of which had shown pyrexial disturbance for several months. One of them (4) became completely normal for ten days immediately on commencing treatment. Two declined by regular fractions of a degree to normal within a week (2 and 6). A case of malignant endocarditis (3) became normal after six weeks, and after a period of much

modified pyrexia, had become perfectly normal again for ten weeks. The fifth case alone very slowly approximated to the normal. The charts have been shown to many medical men, and have given rise to much comment.

A limited number of milder cases were treated subsequently to the above-described, without their knowledge that the treatment was that of Abrams: these "controls" showed a high percentage of general improvement.

Deductions made from such limited material as these few experimental cases need to be made with caution; but two observations are submitted with some confidence:

1. The effect of the oscilloclast seems to be primarily, if not entirely, upon general health. Clinical evidence that the "rates" were specific was not convincing; if they have any specificity it appears to be slight.

2. The best results appear to be secured by gradually reducing the daily

period during which the patient is under treatment; as though an electrical equilibrium, disturbed by disease, were in process of restoration; approximation to the normal requiring a shorter exposure to the corrective agent. This last supposition is supported by the not uncommon occurrence, observed also in some of the cases of the Abrams practitioners, of the greatest improvement occurring *after* treatment has been discontinued, which suggests that the corrective process may go too far.

IX.—IN CONCLUSION

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A CONSIDERABLE number of cases selected from the work of three practitioners of the Abrams method, together with the few experimental cases which the writer undertook, have now been reviewed. It has been endeavoured to present this clinical material accurately and dispassionately, and to judge therefrom whether the oscilloclast produces real objective results. After a year's work, the writer is unable to avoid the conclusion that the instrument exercises in favourable cases an exceedingly powerful influence on general health, which in the treatment of particular diseases may be, and frequently has been, very useful.

Such a conclusion, however carefully and honestly arrived at, could scarcely fail to raise in the mind of an investigator some doubt of his own judgment, if it were certain that the instrument in question induced no electrical condition

which was capable of scientific demonstration. Indeed, clinical findings compelled the writer, in face of all that had been written to the contrary, to postulate the presence of some such electrical phenomenon: furthermore, he was led by clinical evidence to suspect that that phenomenon would be found to be incapable of variation by any mechanism contained in the oscilloclast. Messrs. Ackermann and Clark's report must surely now establish the existence of a definite electrical phenomenon, the invariability of which can hardly be less certain. If the operation of suggestion be still advanced as the chief factor in the treatment, it is at least a remarkable coincidence that clinical deductions should have been so strikingly confirmed in the scientific laboratory.

Messrs. Ackermann and Clark (whose full report is contained in the Appendix), have read and approved the following deductions from their enquiry:—

1. That the oscilloclast is probably intended to mystify and to mislead.

2. That, in direct contradiction to the findings of the observers referred to in certain reports mentioned by Messrs. Ackermann and Clark, it has an electrical effect which can be demonstrated, namely, it causes periodic electric pressure in the patient. This pressure is not capable of variation by the apparatus.

3. Messrs. Ackermann and Clark, as engineers, naturally can make no conjecture as to the therapeutic effect of low and periodic electric pressure induced over long periods of time, for obviously such a question must be decided by clinical and physiological experiment.

The followers of Abrams, of course, may claim that another and deeper principle is involved, which at present cannot be detected by any means known to science; and, however unlikely this may seem, it might be unwise dogmatically to deny the possibility. But it is surely a fair presumption to suppose that an instrument constructed to reproduce the electrical pressure induced by the

oscilloclast, but without all the latter's complications, would yield the same clinical results. Such an instrument could be made simply and inexpensively, and it would be no great matter to put the question to a final and conclusive test. This further investigation is now being undertaken.

If the electrical phenomenon described should thus be found to account for all the effects of the oscilloclast, the main fabric of Abrams' work would fall to the ground. But in its place the study of the therapeutic value of periodic low electrical pressure would arise, the possibilities of which might be considerable. If the employment of a principle, even when fantastically misinterpreted, can produce any results at all, it is surely legitimate to conjecture that a very much wider usefulness will be developed when that principle is fully understood and employed in its simplest form. At present it is not known whether there is an optimum pressure to which all patients must be subjected; or whether this should vary

for each individual, and also, conceivably, for each disease; whether there is an optimum period of exposure which remains constant or requires to be varied; whether, indeed, the make-and-break in the oscilloclast is necessary or advisable. All such elementary questions are at present almost unexamined, and wide research would doubtless be needed to find indications that should guide the operator in his differentiation of treatment. In this connection, mention must be made of the so-called "diagnostic reactions," the accuracy and even the existence of which has been disputed on all sides. The writer can only state his own conviction, after repeated experiment, that they have an objective existence; though he would wish to suspend judgment as to their interpretation in terms of pathology until further investigations are completed. For the present, he is inclined to believe that in all conditions of lowered vitality these curious phenomena can be elicited; and that when the patient is exposed for a time

to the influence of the oscilloclast they tend to disappear. Obviously, if the effect of the oscilloclast is entirely non-specific, and if the "rates of treatment" are indifferent, the "reactions" are not essential to success, however useful they may be in determining the length of treatment. But when the principle of the oscilloclast is embodied in a machine that will admit of variations in the electric pressure, a wide range of experiment may be opened up in which the reactions may prove a necessary guide.

The critics of Abrams have argued, because his theories contain much that is fantastic and incredible, and because, by some amazing oversight, they could discover no electrical effect to be produced by his instrument, that, therefore, his clinical results were fallacies. But now that an electrical phenomenon has been demonstrated beyond all question, the nature of which seems to dispose of any necessity for belief in Abrams' speculations, is it still to be held that

carefully examined clinical results are to count for nothing? The writer considers it more reasonable to link the electrical pressure discovered with the clinical results observed as cause and effects, and to suggest that the therapeutic benefits of periodic low electrical pressures are worthy of further investigation.

APPENDIX

APPENDIX

Report on the oscilloclast, with diagram.

NOTE.—The proofs of this report have been submitted to Messrs. Ackermann and Clark, who have found them correct and identical with the original report in the author's possession, except for some trifling verbal alterations approved by them, and for the omission of medical names, addresses, and of the identification numbers of the instruments examined. These are all available on application.

REPORT ON THE OSCILLOCLAST OF THE LATE DR. ALBERT ABRAMS, OF SAN FRANCISCO.

The author of this book having instructed Mr. A. S. E. Ackermann,

B.Sc. (Engineering), A.C.G.I., M.Cons.E., A.M.I.C.E., of 17, Victoria Street, Westminster, to report on the oscilloclast of Abrams; Mr. William Clark, A.M.I.E.E. of 53, Victoria Street, Westminster, was invited by Mr. Ackermann to assist him, and in the investigation herein reported both were present at all the experiments that were made. The author stated, before the enquiry was commenced, that clinical findings had led him to postulate the production of some electrical phenomenon by the oscilloclast, which appeared to be non-specific in its clinical effects. They report as follows :—

It is to be clearly understood, at the outset, that our investigation has been purely electrical and mechanical. We have made no experiments or investigations with patients under treatment, but we have subjected ourselves and others to brief periods of what we were told was the usual application of the apparatus, for the purpose of making part of our

investigation under normal working conditions.

We have read the twelve reports made by the Committee of the *Scientific American*, which appear in the twelve monthly issues of that paper, from October, 1923, to September, 1924, inclusive. We have also read the reports which appeared in the *British Medical Journal* and *The Lancet*, both of January, 26, 1924. We have not experimented with, or even seen, the so-called "dynamiser" by means of which we understand the Abrams practitioners claim to diagnose diseases by means of a few drops of the dried blood of a patient, or a specimen of his handwriting; but, as far as we are able to judge of this method of diagnosis from the above-named reports, and considering it purely from the point of view of physics, we are of opinion that no consistent, trustworthy, or physically and logically explainable results can be obtained; and that consequently such physical phenomena as there may be in connection with the

Abrams method of diagnosis as we know it are perfectly useless for any purpose.* We make this statement as we wish our position in regard to the physical phenomena connected with the oscilloclast to be the more clear.

The said reports which we have read refer to few, if any, specific physical experiments having been made with the oscilloclast or its rheostats; and only *The Lancet* gives a wiring diagram of the oscilloclast, referred to in that report. Apparently only an ocular inspection of the apparatus was made.

In regard to the report in the *British Medical Journal*, of January 26, 1924, we, in contradiction of the statement of "a competent electrician," do not consider that a rheostat, or collection of resistance coils, is an instrument for "*measuring* small amounts of ohmic resistance"; nor do we consider the rheostats that we experimented with were such as "would be thrown out of any high-

* NOTE.—The author wishes to record that in his opinion sweeping statements in regard to the "diagnostic reactions" of Abrams are premature.

school laboratory," for they were well made and finished, and the resistances of the coils were approximately the same, as the results (given hereinafter) of our determination show. They certainly could not be bought as "electrical toys" for four shillings a set, and are, in our opinion, suitable for the use of students.

Each oscilloclast we examined contained a small induction-coil on an open circuit; this coil was therefore useless, but there was no resistance and no condenser.

We do not agree with the statement of Abrams that "the force or energy produced by his machines was 'unappreciable, unidentifiable, unmeasurable, by any known scientific instrument.'" When the subject was insulated and treated in what we were informed was the normal manner, with a D.C. potential of 200 volts, the galvanometer reading was 2°, where 30° were about equal to 12 micro-amperes. The galvanometer was in series with the single lead from the apparatus to the subject This minute

current was due to leakage through the subject. When the insulation of his feet was less, the galvanometer reading increased to 6°; and when his shoes were on the polished boarded floor the reading was 22°, and might of course have been increased still further by gradually reducing the resistance to earth.

We note that Prof. R. A. Millikan is reported in the *British Medical Journal*, of January 26, 1924 (p. 164,) to have stated that "they attempt to find the natural frequency of the disease by inserting more or less electrical resistance into a circuit which cannot oscillate at all, and therefore has no vibration frequency"; and yet a few lines further on the report states, "Millikan also pointed out that the oscilloclast produced a frequency of the order of 400 to 500 per sec." This appears to be a contradiction. The explanation is probably that the dynamiser is referred to in the former sentence, while in the latter it is the oscilloclast.

Referring to the report by Dr. F.

Howard Humphris in *The Lancet*, of January 26, 1924 (pp. 176-8), our comments are as follows :—

We do not, in regard to the apparatus which we examined, agree with Mr. Frank Rieber that the "wiring and construction show a profound ignorance on the part of the inventor of all the laws of electricity or of handling of the electric current." On the contrary, we consider that the apparatus includes excellent electrical fakes, well suited to impress those who have little or no knowledge of electricity, and needing careful electrical experimental work to determine what the apparatus does do, and *what it does not do;* for there were several possibilities which had to be tested before it could be stated definitely that certain effects were *not* produced, which otherwise it might have been claimed were existent. It must be borne in mind that a complete outfit is sold for about £150, and that to make it look as if it might be worth this sum a "display" had to be made; for the income of the

inventor appears to have been largely derived from the sale of the outfits, and we note that the home-address of the late Dr. Albert Abrams, and the address of the Physico Clinical Co. were the same, namely, 2151, Sacramento Street, San Francisco. The "display" is an excellent one and the profit on the sales must be equally so.

We also disagree with Mr. Frank Rieber (as reported in the said issue of the *B.M.J.*) that "there is more electricity in a handshake, or in the 'laying on of hands' than is delivered by the oscilloclast." We have already recorded the small leakage current through the subject, and have to add that in all cases in our experiments the subject was submitted to the same electrical pressure as that of the supply mains of the house or office in which the experiments were made; and that this pressure was interrupted 196 times per min., by the oscilloclast. Whether this electrical fact is of the slightest or greatest advantage or

disadvantage to a person receiving the treatment is a medical question which does not concern us. We were not instructed to investigate this side of the matter, and neither of us is qualified to form any opinion of what the effect is, or is likely to be, on a patient. We may say, however, that when we were the subjects we felt no effect whatever, and were quite unconscious of whether electrical pressure was on or off, except when, in the case of the alternating current, we were stroked on the hand or head by the fingers of someone else who was not standing on insulators; and except when (also with A.C.) Mr. Clark held the terminal between his teeth. In the case of the stroking there was a rough or vibratory sensation at the points of contact of the fingers which was unmistakable. We were easily able to say when the A.C. pressure was on or off by means of this effect, when it was impossible for us to know by any other means that this was so. Similarly we were able, in the case of the A.C. supply mains,

to determine by means of wireless head telephones, whether the subject was connected or not to the oscilloclast. For this purpose it was *not* necessary to have any connection between us and the subject, or between the telephones and the subject. It sufficed for us to be near the charged subject, but not touching him, while we had the head telephones on and held one of their leads between our fingers so as to make an electrical contact with it. These facts justify our stating that a patient undoubtedly is subjected to some electrical environment when under treatment, but we repeat that it is not our province to conjecture what therapeutic effect, for good or ill, would thereby be occasioned.

Referring to the reports in the *Scientific American*, at p. 207 of the issue of March, 1924, it is stated, "If there is anything in the E.R.A. (Electronic Reactions of Abrams) technique it is certainly not electronic, electrical, or magnetic." In regard to this, our investigation has not extended into the domain of molecular

physics *per se*, so we cannot criticise the matter from an electronic point of view; and we agree the patients are not subject to any appreciable magnetic influence; but, as regards the Abrams apparatus investigated by us, we have no hesitation in stating that there was a perfectly definite electrical condition of the subject.

At p. 141 of the *Scientific American*, of August, 1924, it is stated, "In our opinion . . . the oscilloclast is nothing more than an electric buzzer. You might as well tie a door-bell round your neck and expect to be cured as to rely upon this instrument." This may be true of the design of the oscilloclast examined by the Committee of the *Scientific American*. They gave no wiring diagram nor detailed description of the apparatus, so we cannot say. The remarks could not, in our opinion, be correctly applied to the apparatus with which we have experimented, nor apparently could they be safely made in reference to the oscilloclast of which the wiring diagram

is given at p. 177 of *The Lancet*, of January 26, 1924; for that diagram shows that the patient was connected to one of the two terminals of the 110 volt (whether A.C. or D.C. is not stated) electric lighting-circuit, much in the same way as were our subjects.

We have experimented with two oscilloclasts ; one connected to a D.C. and the other, an identical apparatus, to an A.C. circuit.

We also experimented with three triple rheostats.

The first experiments occupied a day (Saturday, October 18, 1924). The author of this book was present for about the first third of the time. The second set of experiments took half a day, and we were alone. The third and fourth sets of experiments were made at Mr. Clark's office, 53, Victoria Street, Westminster. The author brought the apparatus to Victoria Street, and fetched it away, but was not present while we were making experiments; nor was anybody else on any of the four

occasions, except as stated, and except that two other medical men occasionally came into the consulting-room in which we were working, for a few minutes. We make these statements, as we wish it to be clearly understood that we were left perfectly free to do as we liked with the apparatus, and that no interference with it by others was possible while we were making our investigations.

To prevent any possible confusion, it should be pointed out that it is clear the oscilloclasts with which we experimented were *not* of the same design as that illustrated and described at p.177 of *The Lancet,* of January 26, 1924. The motors of the oscilloclasts we used had oscillating (not rotary) armatures; the medical "circuits" were made and broken by an oscillating (not rotary) "circuit-breaker," and these "circuit-breakers" were properly electrically connected to other parts of the apparatus. Each of the two oscilloclasts herein reported upon also had a true circuit-

breaker in the power-circuit driving the oscillating motor, and the motor could not work without this breaker, because each of the two field magnets had a double winding. One of these coils in each was permanently magnetised when the motor switch was "in", while the second and opposing coil in each had the current in it broken 98 times per minute, the armature making 98 complete oscillations per minute, while the medical "circuit" was made and broken 196 times per minute.

Accompanying this report are wiring diagrams of the oscilloclasts and rheostats with which we experimented.

Description of the Apparatus, Tests and Results.

Each "Oscilloclast" treatment apparatus consists mainly of two parts, (1) a large wooden box containing a slow-moving electric motor and an arrangement of coils, the function of this

instrument being to create certain electrical conditions; (2) a smaller wooden box with vulcanite top containing twelve adjustable resistances with terminals and a small low-voltage lamp and switch. This arrangement of adjustable resistances is intended to vary the intensities of the electrical effects produced by (1) which are transmitted by a wire through the adjustable resistances to the subject.

The arrangement of connections of the whole apparatus and the connection to the subject are shown on the accompanying diagram.

(1) contains a slow moving electric motor consisting of a magnetic circuit made up by iron cores (B) (C) and (D) and limbs (G) and (H) and an iron armature (A). Brass washers (I) and (J) are inserted between the core (D) and the limbs (G) and (H). The cores (B) (C) each have a double winding. Windings (K) and (L) are connected in series and when traversed by an electric current magnetise the circuit in one

direction. Windings (N) and (O) are in the reverse direction to windings (K) (L) and are only connected in series when contact-maker (P) and contact (Q) are closed. For clearness this contact-maker is shown on the diagram as an arm and a contact, but in the actual apparatus contact-maker (P) consists of a flat brass sector with a vulcanite insert, together forming a disc (which is oscillated by a tappet on the rocking armature), and contact (Q) is a plunger mounted on a vulcanite plate. These pairs of windings (K) (L) and (N) (O) constitute two solenoid coils acting magnetically on the cores (B) (C) one coil being superimposed upon the other. They are electrically connected in parallel and if contact-maker (P) and contact (Q) are closed any current flowing along wire (S) to junction (T) will divide and pass through both coils and out at (U). The coils (K) (L) and (N) (O) being opposed, the magnetic effect in the magnetic circuit will be practically nil as long as contact-maker (P)

and contact (Q) complete the electric circuit, but as soon as this circuit is interrupted the magnetic circuit becomes energised.

A rocking armature (A) pivoted so as to swing between the cores (B) (C) is normally controlled by a weight (W) and when the weight is at its lowest point the armature takes up a position out of alignment with the cores (B) (C) as shown in the diagram. When in this position, it can be drawn into alignment with the cores if the magnetic circuit is energised. The armature is provided with a short lever to facilitate starting by hand.

Contained in the lower half of the wooden box is an arrangement of coils as shown at (X) on the diagram. This consists of a card tube having a solenoid winding of about fifty turns of wire, concentric with and passing through a flat wooden disc on the side of which is fixed a small telephone transformer (Z). On the periphery of the wood disc a single turn of wire is wound terminating

at a staple, the other end being connected to one terminal of the secondary winding of the transformer. The other terminal of this transformer is not connected electrically. One end of the winding on the card tube connects with the wire (V) and the other to the primary winding of the transformer, the opposite end of the primary winding connects with wire (V) at (Y) forming a closed circuit. Therefore no current flows from the oscilloclast apparatus or supply mains in this circuit. The only current that could flow in this circuit would be an induced one, and such current could not flow in the oscilloclast circuit. The single turn of wire on the wooden disc and its connection to the secondary winding of the transformer do not form a circuit as they are not electrically connected, therefore no current can flow either by conduction or induction. It appears that this part of the apparatus is redundant.

The small lamp (E) in the adjustable resistance box appears to be for

the purpose of testing the connections only, and is not used when treating subjects.

In operation, the switch (F) is closed by a press-button, thereby allowing a current of about 0.8 amp. to flow from the supply mains through the limiting resistance (R) and through the coil (K) (L). This current energises the magnetic circuit and the armature (A) is drawn into alignment with the cores (B) (C) it being assisted in its first swing by a light push by the finger on the lever. When the armature has swung far enough a pin fixed to one side pushes contact arm (P) on to contact (Q) thereby closing the electric circuit through coil (N) (O), the effect of this is to de-energise the magnetic circuit as previously described, and allowing the armature to swing back out of alignment with the cores (B) (C) under the influence of the weight (W). The armature having swung in the reverse direction far enough, the contact arm (P) is pushed off contact (Q) by a pin and

the current flowing in the coil (N) (O) is interrupted, allowing the magnetic circuit to be energised again as before.

The armature and weight act as a pendulum in motion which ticks loudly at every swing, due to the tappet on the armature striking the ends of the slot in the contact-maker (P), and the motions are sustained by the alternate energising and de-energising of the magnetic circuit by the operation of the contact-maker (P) (Q) controlling the flow of current in the coil (N) (O).

Fixed to the rocking armature is a second contact-maker (M_1), (shown diagrammatically on the accompanying illustration) connecting with contact (M) at every swing of the armature. The effect of this is to connect one end of winding (N) to the wire (V) going to the adjustable resistance box.

The sequence of all the contacts made and broken during a complete period of oscillation of the rocking armature and the condition of the magnetic circuit

(when the apparatus is connected to the supply mains), is as follows :—

Position of armature.	"M" contact.	"P" contact.	Magnetic circuit.
Rotated clockwise ..	off	off	energised
Rotating counter-clockwise	on	off	do.
Do., further ..	off	off	do.
Do., still further ..	off	on	de-energised
In alignment with cores	off	on	do.
Rotating clockwise. .	on	on	do.
Do., further ..	off	on	do.
Do., still further ..	off	off	energised

From the foregoing it will be apparent that during every complete oscillation of the rocking armature a wire between the contact (M) and the resistance box is twice connected and disconnected with one end of winding (N). The other end of this winding being connected to one supply main. Therefore, when a subject is holding a wire coming from one terminal of the resistance box a small current will flow from the supply main through winding (N) contact-maker (M_1) (M) along the wire (V) and through the adjustable resistance to the subject. Assuming the subject to be perfectly

insulated from earth and in a dry atmosphere the current flowing to him would be very minute, and only sufficient to enable him to become charged to a potential equal to that of the supply main. If the subject is perfectly insulated from earth and surrounding bodies, and the air is non-conducting and the whole apparatus and connecting wires are perfectly insulated, then upon the subject being charged by the first contact at (M_1) (M), no further currents would flow to him.

Such conditions of perfect insulation do not obtain in practice and the subject would therefore lose the charge by leakage when the contact-maker is open.

The conditions in practice are, the subject is seated on a chair insulated by glass cups from the floor, and the feet are placed on a rubber mat. The surrounding air generally conducts to some extent. The insulation of the apparatus examined was not perfect.

Taking these conditions, the subject is charged about 200 times per minute

to a potential equal to that of the supply main and this charge is partially dispersed by leakage during the interval when the contact-maker (M) and (M_1) is interrupted.

Tests carried out at 92, *Tulse Hill, S.W.* 2, *on October* 18, 1924. Supply mains 220 volts A.C. 50 frequency.

The apparatus was connected up in the usual way and a subject placed in an insulated chair. The only effect noticed was when the subject was lightly touched on the bare skin with a finger, when a "roughness" was felt as the finger was moved slowly over the skin. The effect was found to be due to the alternating current and was reproduced without the oscilloclast apparatus, by taking a wire direct from the supply main to the subject. Only one main was connected to the subject at a time, but the effect could be obtained from each main.

To determine whether any charge effect was given to the subject by the

oscilloclast apparatus, Mr. W. Clark sat in the insulated chair and held the end of a wire from the resistance box between his teeth (this being a sensitive method of detecting an electric current). A slight shock was felt at the roots of the teeth at every contact of the rocking armature. The resistance was varied from "0" to "10", but no change was noticed in strength of the shock received. When the test lamp was connected in series with the resistance-box the illumination steadily decreased as resistance was inserted.

Another test was made to determine whether any charge effect was given to the subject. A pair of wireless telephone receivers was placed over the ears of an operator, and one terminal of the receivers was held in the operator's hand. On approaching, but not touching, the subject, who was in the insulated chair, under the influence of the oscilloclast treatment, each contact of the rocking armature was observed by a click in the receivers. Also the frequency-note

of the alternating supply mains was noticed. When the operator walked away from the subject the electrical effects noticed were diminished. Also, it was observed that when the subject let go of the wire from the apparatus and was not connected in any way, the electrical effects detected by the telephone receivers ceased. This proves that the subject is subjected to an electric influence when connected to the oscilloclast.

A diagram of all connection of the apparatus was made.

Tests with a second oscilloclast connected to a 200 volt D.C. circuit.

A diagram of connections of the oscilloclast apparatus was made. A subject was placed in an insulated chair and connected with the apparatus in the usual way. A test was made to obtain the "roughness" effect by lightly touching the subject with a moving finger, but nothing of this nature was observed. This confirms that this effect is due to

alternating current only. The current used in the above tests was direct.

A sensitive galvanometer was connected between the subject and the resistance box to indicate any flow of current to the subject. Only a current of 2° was indicated as long as the subject remained insulated, but on removing the rubber mat, so that the feet rested on a cushion, a deflection of 6° of the galvanometer was obtained, and with the subject's feet on the wood floor, 22°.

The galvanometer used was a unipivot type made by the Cambridge Scientific Instrument Co., and has a period of over one second; therefore it would not respond to a current flowing instantaneously when the oscilloclast contact was made. 30° on the galvanometer scale are equal to 12 micro-amperes of current.

A test was made to ascertain if any current flowed in the coil-arrangement (X). One connection wire at (Y) was removed from the terminal and the above-mentioned galvanometer was in-

serted to make connection at (Y). The oscilloclast was connected up to the supply main in the usual way. No current was indicated by the galvanometer. A slight shock was felt by the subject when touched by the operator who was partially earthed.

Tests were made with a "Silvertown" new type Wheatstone bridge to determine the values of the resistances contained in four of the adjustable resistance-boxes or rheostats. The results were as follows :—

Box A.

Contact No.	*Dial No. 1.** Ohms.	*Dial No. 2.* Ohms.	*Dial No. 3.* Ohms.
0	0	0	0
1	100	100	100
2	201	200	201
3	301	301	300
4	401	402	403

*No. 1 is on the left when the name-plate of the instrument faces you

Box A—*contd.*

Contact No.	*Dial No. 1.** Ohms.	*Dial No. 2.* Ohms.	*Dial No. 3.* Ohms.
5	501	502	504
6	601	604	605
7	701	706	706
8	801	807	808
9	904	909	909
10	1,003	1,002	1,003
11	0	0	0

* No. 1 is on the left when the name-plate of the instrument faces you.

Box B.

Only the total resistance of each dial (corresponding with Contact No. 10 of the previous test) was determined as follows :—

Dial No.	1 ..	..	1,002 ohms.
,, ,,	2 ..	..	1,000 ,,
,, ,,	3 ..	..	1,000 ,,

Box C. Ditto.

Dial No.	1 ..	..	1,001 ohms.
,, ,,	2 ..	..	1,002 ,,
,, ,,	3 ..	..	1,000 ,,

The above three rheostats bore the name-plate of the same firm, namely, the Physico Clinical Co., of San Francisco.

A similar rheostat, bearing the label of C. Yeo, of 3, Kildare Gardens, London, was also tested. The dial numbers of this instrument were each preceded by a decimal point and each dial was marked "TENTHS." The meaning of this is that these unit resistances are each one-tenth of the value of those of the previous boxes, i.e., 10 ohms each instead of 100 ohms. There was no maker's number on this rheostat.

Dial No. 1	(total resistance)	..	102 ohms.
,, No. 2	,,	,,	.. 96 ,,
,, No. 3	,,	,,	.. 102 ,,

Tests at 53, *Victoria Street, S.W.* 1.
Supply voltage 220 D.C.

The last mentioned oscilloclast was brought to Mr. W. Clark's office, at 53, Victoria Street, S.W.1.

The sequence of contacts made was carefully examined to ascertain if there were any induction effects between the motor windings, thereby giving a momentarily impressed voltage to the subject.

The sequence of contacts is such that there is no change in the magnetic induction of the motor when the contact-maker (M) is closed; therefore, no super-imposed voltage is generated in winding (N).

A test was made to detect a charge on the subject when connected to the oscilloclast apparatus in the usual way. A gold leaf electroscope was set up within reach of the subject and the plate of the electroscope was touched by the subject. The leaves of the electroscope repelled each other at every contact of the oscilloclast rocking-armature.

The magnitude of the electroscope movement was noted. Thereafter the plate was connected direct to the positive pole of the supply mains, without any connection to the oscilloclast, when the same magnitude of movement was observed, but without pulsation. When the contact to the main was made and broken by hand about 200 times per minute, pulsation was observed as when the electroscope was connected with the oscilloclast apparatus. When the polarity was reversed and the negative terminal connected with the electroscope no effect was noticed.

The result of the above tests proves without doubt that when a subject is connected with the oscilloclast apparatus in the usual way, he receives a definite charge of electricity about 200 times every minute. The potential of this charge is equal to that of the supply main connected to the wire (S) on the diagram.

Another test was made to determine the effect of varying the values of the

resistances between the oscilloclast and the subject. A ballistic galvanometer was connected in series with the subject, the variable resistance-box, a switch key, and the positive pole of the supply main. The subject was insulated from earth. On closing the key the deflections of the ballistic galvanometer were noted, and the value of the resistance between the subject and the key changed from "0" to "10" (corresponding to a change of resistance from 0 to 1000 ohms). No change was observed in the magnitude of the charge when the maximum or minimum resistances were inserted.

It would appear that since the current flowing to the subject is very small, due to the comparatively low capacity of the human body and the low voltage used for charging, the variation of the resistance-box values, which are between 0 and 1,000 ohms, does not affect the rate of charging.

Having made the experiments and investigations herein recorded, we are satisfied that a patient, when treated as

were our subjects by the oscilloclasts we used, is subjected to the electrical pressure of the supply mains, whether the current in the mains is alternating or direct, and that this pressure is interrupted about 200 times per minute. We are also satisfied that these electrical effects could be produced by a more simple and less costly apparatus.

This report is written on the condition that if it is made public in any way, the whole of it must be published. If it is desired to publish an abridgement of it, then our written permission, agreeing to such abridgement and publication, must first be obtained from us.

A. S. E. ACKERMANN.
W. CLARK.

NOTE.—In regard to diagram overpage, by mistake some resistance is indicated between contacts Nos. 11 and 0. In fact, there was no resistance between those contacts.

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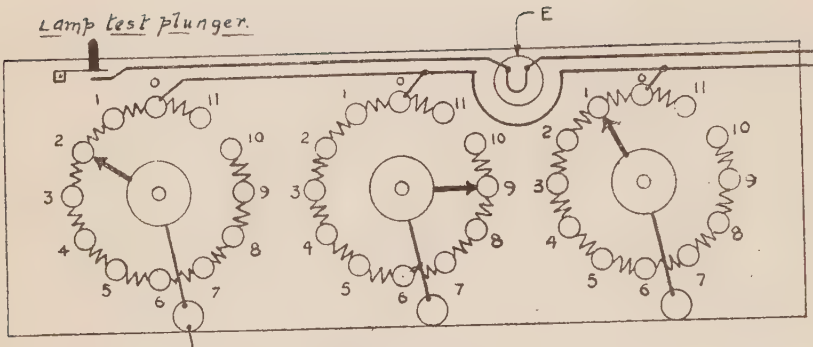
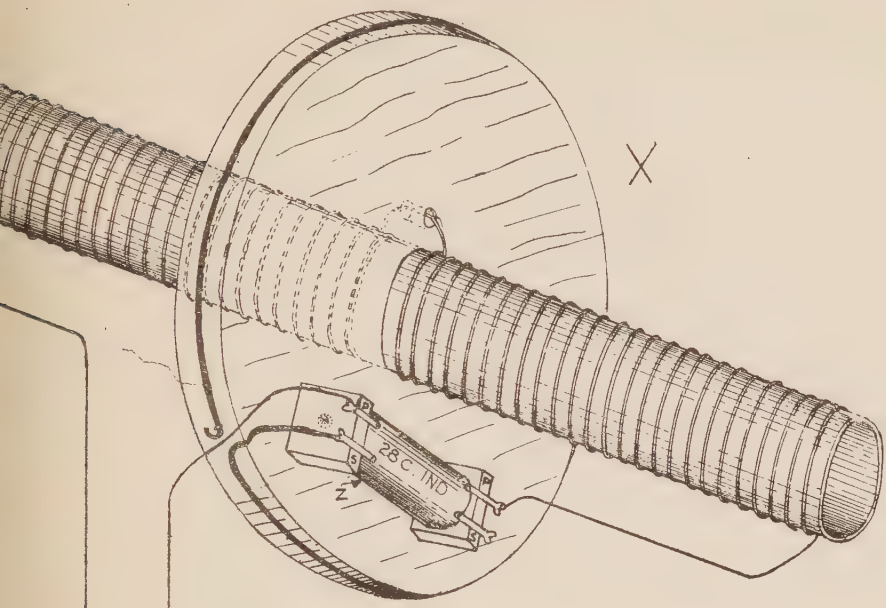
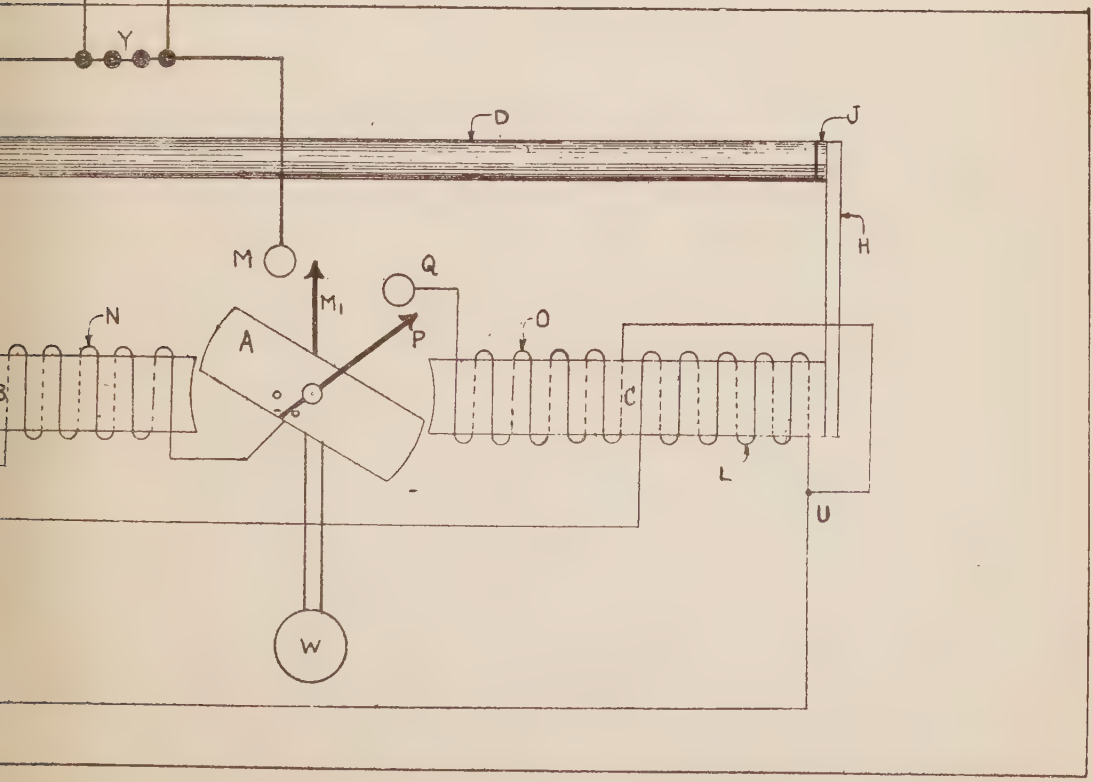
DIAGRA



Resistance Box.

Switch.

SCILLOCLAST ~

ARRANGEMENT OF APPARATUS AND ITS CONNECTIONS.